

Hacienda Mercedita Foundry
Barrio Sabanestas
Municipality of Ponce
Puerto Rico

HAER No. PR-8

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
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HISTORIC AMERICAN ENGINEERING RECORD

Hacienda Mercedita Foundry

HAER No. PR-8

Location: Ponce, Puerto Rico

Date of Construction: c. 1830s

Original Use: Sugar Mill

Present Use: Sugar Mill

Present Owner: Serralles Family

Significance: A significant part of the Serralles family empire. Typical of the sugar cane plantations in Puerto Rico which underwent considerable technological change and became a full-mechanized producer of sugar and cane by-products.

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The origins of the Serralles family, owners of Hacienda "Mercedita," are found in Catalonia (Spain). The head of the family, Sebastian Serralles, came to Puerto Rico in the first decades of the 19th century, married to Teresa Pont y Puig from Barcelona (Spain). They had two children, Felix and Sebastian Marcial. [1]

Sebastian Serralles had another child by Juana Colon named Juan Eugenio Serralles y Colon, who was born around 1836. The birth of Eugenio was legitimized by Royal Decree in 1867. Later, he married Mercedes Perez, from Ponce, Puerto Rico, and had three children, Merceces, Pedro Juan, and Nicanor. [2]

Atune with the times, the development of the Serralles fortune and wealth was predicated within the family structure, but with one peculiarity, Juan Eugenio assumed a prominent role in the expansion and consolidation of the family's power.

The available evidence proves that the Serralles engaged in a multiplicity of economic transactions, but foremost -- especially from 1830s up to the end of the century --, in the acquisition of arable land which would comprise the bulk of their sugar haciendas and the basis of their primary enterprise, sugar production.

The growth of the haciendas as producing units was set within the context of a selected period in which a relative modernization in sugar production took place. For the Serralles, it meant heavy investment in steampowered machinery, the need to enlarge land property as a result of the potential increase in production implied by the purchase of such technology, the application of scientific discoveries to sugar production and refinement processes, and the need to enlarge and reorganize the hacienda's labor force as a consequence of the technological developments and the imminent abolition of slavery in Puerto Rico toward the beginning of the 1870s. On the other hand, the development of beet sugar production by the 1850s and 1860s was gradually displacing cane sugar in world markets, especially the unrefined type. Thus, it was only through mechanization and increased technological efficiency that the sugar cane industry could compete and survive in highly competitive international markets.

Large scale sugar production required considerable capital investment in land, labor, and technology. The case of the Serralles enterprises magnificently illustrates this point. From the 1840s to the 1870s, the Serralles family invested approximately 440,000 Spanish silver pesos in agricultural land purchases in the rural areas of Ponce, Juana Diaz, Utuado, and Jayuya. [3] The approximate total acreage bought amounted to 5,216 acres. [4] Sugar cane production also demanded large extensions of arable land, especially since the industry was solely directed to become an export commodity within one-crop commercial agricultural economy. [5] Thus, in a sense, the development of a profitable

sugar industry in Puerto Rico during the second half of the 19th century implied the development of an agricultural land aggregation process and the subsequent formation of latifundia.

The mechanism used by the Serralles was the consolidation of land through purchases of adjacent land plots. The newly-acquired plots would then become part of a previously-acquired property. In this way, the Serralles haciendas increased its size and the possibility of expanded production. As previously stated, the Serralles focused their attention on three adjacent barrios in the southern town of Ponce -- Capitanejo, Sabanetas, and Coto --. The three barrios had the enormous advantage of being irrigated by the Inabon River from north to south. On the other hand, since the south of Puerto Rico had a very arid climate, the sugar hacendados faced the need to control available water resources in order to make land more productive. This explains the practice of leasing small plots of land adjacent to the river banks and/or stipulating in leasing contracts that canals could be built by the leasor, in this case, the Serralles. [6] This seems to have been a common practice through the island's southern coast.

Many of these particular contracts were followed by grantings of "water irrigation concessions" by the Spanish Colonial Government as they were requested by sugar hacendados. The concessions are recorded in the Notarial Records of the localities and the Public Works archival sections at the General Archives of Puerto Rico in San Juan.

As stated before, the Serralles' largest properties were centralized at the three adjacent barrios, forming a closely-knitted land structure which was divided around 1875 into four major haciendas, "Teresa," owned by Sebastian; "Fe," "Mercedita," and "Laurel" owned by Juan Eugenio. [7]

The Serralles had also heavily invested in land purchases in three other towns north of Ponce: Juana Diaz, Utuado, and Jayuya. During the 1860s and 1870s, these comprised approximately 3,041 acres at an estimated 74,000 Spanish silver pesos value. Two haciendas, "Cintrona" and "Destierro," were part of this property.

The following table summarizes land purchases by Sebastian and Juan Serralles for the period 1840s-1880s:

I. PONCE

<u>Barrio</u>	<u>Acres</u>	<u>Value</u>
Coto	510	139,543
Sebanetas	295	22,820
Capitanejo	729	146,488
Machuelo	<u>641</u>	<u>46,620</u>
2,175 acres		355,471 Sp. pesos

II. JUANA DIAZ

<u>Barrio</u>	<u>Acres</u>	<u>Value</u>
Hato Puerco	763	47,694
Sabana Llana	125	3,560
Cintrona	155	5,064
Villalba Arriba	62	1,500
Guayabal	681	6,000
Rio Canas	<u>24</u>	<u>1,400</u>
	1,810 acres	65,218 Sp. pesos

III. UTUADO and JAYUA

	1,131	9,800 Sp. pesos
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IV. TOTAL ACREAGE AND INVESTMENTS

Ponce	2,175	355,471
Juana Diaz	1,810	65,218
Utuaado and Jayuya	<u>1,231</u>	<u>9,800</u>
	5,236 acres	430,489 Sp. pesos

As stated, the Serralles also invested in leasing land adjacent to their properties or to water sources. The leasing contracts fluctuated between 2 to 10 years, and the rent depended on tract size and land quality. The approximate volume of land leased between 1860s and 1870s amounted to 1,180 acres and the approximate rent was 10,000 Spanish pesos. [8]

Capital investment was also carried into labor force. Data pertaining to free labor --distinct from black slavery-- is not available in the Notarial Records. Nevertheless, the gathered information related to slave labor prior to 1870 is highly revealing. In 1872, one year before the legal abolition of slavery in Puerto Rico, the Spanish Colonial Government made a carefully detailed slave census. The slave population was entered by town, slave owner, age, origin, marital status, descent, skills, etc. Sebastian and Juan Eugenio Serralles appeared as owners of 116 slaves. [10] Out of the 116 recorded slaves, 72 were male and 44 female. Ninety-eight percent of the male slave population (71 out of 72) were field slaves, as well as 93% of the females (41 out of 44), [11] The median age for males was 30-39 years, 20-29 for females. [12]

The approximate total investment in slave purchases, computed from the Notarial Records for the years 1830s to 1870s, was close to 20,000 Spanish pesos. [13] The 1872 abolition of slavery forced former slaves --or libertos-- to hire themselves out for the next three years, either with their former masters, other owners, or the Colonial Governments. [14] Accordingly, it is possible that after 1873 most of the libertos continued to work at the Serralles haciendas.

The following tables illustrates the points raised:

I. CAPITAL INVESTMENT IN SLAVE PURCHASES [15]

1830-1872

1830	694 Spanish pesos
1840	1,680
1850	7,090
1860	7,230
1870	<u>2,615</u>
	19,309 Spanish pesos

II. SLAVES BY SEX, AGE GROUP, AND OCCUPATION

1872

<u>Age</u>	<u>Males</u>	<u>Females</u>
1-10 years	17	16
11-20	14	15
21-30	24	9
31-40	12	4
41-50	<u>5</u>	<u>--</u>
	72	44
Cane field slaves	71	41
Other	<u>1</u>	<u>3</u>
	72	44

(Source: AGPR, RSGPR, e. 24, b. 84)

As will be seen, the type of financial mechanisms allowing for such heavy investment in lands, slaves, and machinery is not altogether clear. It should be clarified, although, that the Spanish Colonial economic structure in Puerto Rico during this period was a dragging stone for the development of agricultural

capitalism (see "Introduction" to HAER Hacienda Buena Vista report). Thus, one of the major problems facing this analysis is that of establishing first the precise way through which this whole setting of investments got underway; and, second, its rationale vis-a-vis the prevailing economic structure.

The documents already analyzed show the Serralles involved in several money-lending activities and financial transactions. For example, in 1863 and 1868, they lent about 6,500 Spanish pesos to two individuals. [16] In 1871, they became partners in a trading company by investing 6,000 Spanish pesos in shares. [17] But, on the other hand, another set of documents show the Serralles as debtors, to the point that Juan Serralles had his haciendas mortgaged in 1875 for a total of 67,700 pesos. [18] He was heavily in debt to one individual for the sum of 57,000 pesos. [19]

One of the most intriguing series of documents deals with the Serralles' indebtedness and the sale of haciendas "Mercedita," "Fe," and "Laurel" in April 1875. [20] The reasons for these transactions are rather obscure. According to the documents, they suggest that Juan Eugenio Serralles was preparing to leave for Spain and decided to "sell" all of his assets in Puerto Rico. [21] Therefore, he sold the properties for 300,000 pesos. But two months later, he bought them back for 325,000 pesos. [22] The conditions of the first sale reveal that Juan Eugenio was far more in debt than suspected, since he owed several creditors the sum of 60,000 pesos. [23]

Two questions remain unanswered for the time being: what were the meanings of these transactions and to what extent indebtedness fits into this picture; and, how and from where did Serralles get the money to buy back the haciendas?

Since no mechanical or architectural ruins remain of the Serralles haciendas, it was fortunate that these dealings, which required public notarization, included descriptions of the properties. In 1875, hacienda "Mercedita" included 479 acres, 300 of which were planted with sugar cane. [24] According to the evidence, the hacienda began its expansion by 1866 when Juan Eugenio bought 230 acres of land. [25] Between 1860 and 1870, he acquired 249 acres of adjacent land to make up the 479 acres. [26] Hacienda "Mercedita" comprised 77 acres of leased land. [27]

The following figures are partial inventories pertaining to haciendas "Mercedita, Fe, and Laurel" in 1875. [28]

I. HACIENDA "MERCEDITA"

Land	479 acres
Oxen yokes (pairs)	80
Steam engines	2
Jamaican train (5 vats)	1
Boilers	3
"Sulphur machines" (Steward system?)	2
Cooling pans	12 (30 feet long each)
Defactors	6
Copper pumps	2
Bronze pumps	2
Copper serpentine	3
Portable steam engine	1

II. HACIENDA "FE"

Land	670 acres
Cattle driven sugar mill	2
Oxen yokes (pairs)	62

III. HACIENDA "LAUREL"

Land	456 acres
Jamaican train (4 vats)	1
Boiling and purging house	1
Copper pump	1
10 HP steam engine	1
Jamaican trains	2

Even though no factory or steam engine description appears in the hacienda "Fe" inventory --it had already been incorporated into hacienda "Mercedita"-- [29], a document dated back to 1869 stated "that a steam power mill was part of the hacienda's assets." [30] At the time of its acquisition by Juan Eugenio Serralles, hacienda "Fe" grouped 478 acres of land priced at 135,750 pesos. [31] By 1875, besides its 670 acres, it had additionally leased 206 acres. [32]

Hacienda "Laurel" comprised 238 acres as originally bought by Juan Serralles back in 1869 [33], but by 1875 it had practically doubled in size. According to a 1869 description, the hacienda had a steam powered mill and all the required standard equipment for sugar production. Among its buildings, there was a 12-bed hospital. [34] The lump sum paid in 1869 by Juan Serralles for hacienda "Laurel" was 110,000 pesos. [35]

Another property, hacienda "Destierro" --515 acres-- in Juan Diaz was also sold in 1875. [35] Among its assets was a 10 HP steam engine mill. [37] Hacienda "Destierro" had been mortgaged since 1874 for 6,000 pesos. [38]

There is no doubt that the magnitude of Serralles indebtedness did not prevent him from enlarging and developing his economic interests. About 1905, the Serralles properties in Ponce --"Mercedita, Laurel, Fe, Teresa, and Cintrona"-- comprised approximately 3,370 acres of top quality arable land. This is a clear indication that the agricultural land aggregation process leading to the development of latifundia had continued throughout most of the last quarter of the century. [39] In 1877, for example, Serralles made an important investment when he bought hacienda "Bronce" in Ponce's barrio Machuelo. As before, this new purchase was adjacent to other Serralles properties. [40] The new hacienda comprised 632 acres valued in 45,427 pesos. [41]

As to urban property, Juan Serralles invested approximately 14,000 pesos in different properties between 1865 and 1879. [42]

* * * *

Finally, the last observations concern the Serralles' evident interest in the application of new techniques and inventions to sugar production. In 1871, the so-called "Stewart system," a process by which sugar cane juices were clarified through the use of sulphur, was introduced in haciendas "Fe, Mercedita, Laurel, and Teresa." [43] The price paid for the system was 4,500 pesos. [44] One year later, in 1872, Juan Serralles bought the same system for hacienda "Destierro" for 500 pesos. [45]

In 1877, he and a friend, Pedro Salas, patented a system --similar to Stewart's-- by which sulphur gases were used for sugar cane juices clarification. The system worked in the following manner (v. attached drawing):

In the oven C, sulphur is burned, melted, and transformed into gases. Once in this state, it passes through a pipe into the purifier B where the water stream H "vaporizes" the sulphur gas. From the purifier, the sulphur gas passes through pipe J to the bottom of the double bottom gas chamber D circulating through passage E. Since the sulphuric gas in passage E has no exit --unless it is expelled through conduit F-- it has to pass through the multiple fine perforations in the surface of E. The sugar cane juice after entering the upper section of the double bottom gas chamber through canal K is saturated by the sulphuric gas. After gas saturation, the juices exit through conduit L to the Jamaican train where they are reduced into molasses and sugar. The exhausted sulphuric gas is let out through conduit G.

According to Serralles and Salas, their invention had an advantage over similar systems include Stewart's, since it did not require an engine-powered pump and could be built of either iron and wood, or a combination of both, thus reducing production costs. Even more, they argued, that their system had already been tested and found to increase the quality of molasses and sugar. [46]

Juan Serralles also became a partner in two enterprises during the 1870s. In 1872, he bought a brick factory for the total price of 1,599 pesos [47]; in 1875 he formed an industrial society for the production of lime for sugar defecating. [48]

The available evidence suggests, subject to further corroboration, that the Serralles sugar empire was considerably mechanized by the 1880s and 1890s. This was the case of hacienda "Mercedita." [49] On February 3, 1870, acting for the Serralles firm, Wiechers & Company of Ponce ordered an engine-driven, horizontal mill with crushers two feet in diameter by 3.6 feet long from Glasgow's Mirrlees Watson & Company. The cylinder was 1 foot in diameter and had a 2.6 foot stroke. In 1869 and 1875, the Serralles acquired from the same company two 4-vat Jamaican trains. The 1869 purchase consisted of 4 vats with a 450, 400, 350, and 200 gallon capacity respectively. By the end of 1875, two centrifuges were again imported from Mirrlees. Four years later, in 1879, Mirrlees supplied a multitubular vacuum pan for the "Mercedita." Ten years later, in 1899, it seems there was a complete revamping in the hacienda's sugar-making process. The English company, Duncan Stewart, sold "Mercedita" a new steam engine, a mill, two vacuum pans, and 8 to 12 centrifuges.

Three other technological improvements were apparently introduced by Serralles: in 1891, several steam-powered plows were commissioned; by mid-1870s, a Mirrlees steam water pump was installed at the hacienda; and by the early 1880s, Mirrlees again supplied approximately 4,000 feet of portable small gauge railroad

tracks for sugar cane hauling. Additional track was purchased from the French company, Aine Ducauville.

On February 12, 1861, Mirrlees sold a horizontal engine driven mill to hacienda "Laurel." The crushers were 22 inches in diameter and 48 inches long. The cylinder was 13 inches in diameter with a 30-inch stroke.

In 1865, Mirrlees received an order for a horizontal engine driven mill for hacienda "Teresa." The crushers were larger than "Laurel's," 28 inches in diameter and a 36-inch stroke.

In 1854, hacienda "Destierro" purchased a horizontal engine driven mill from Mirrlees. The crushers were 22 inches in diameter and 45 inches long. The cylinder was 12 inches in diameter with a 30-inch stroke.

There is no doubt that the purchase and the application of steam technology were simultaneously developed with land aggregation. Both processes led to full industrial mechanization and sugar production expansion --by the end of the century, "Mercedita" was also refining sugar-- based on intensive sugar cane cultivation. In the early 1860s, "Mercedita" produced 750,000 lbs. mascabado sugar; 3,200,000 lbs. in the 1880s, and 5,600,000 lbs. in the late 1890s. For a period of 30 years, ending in 1899, "Mercedita" always had net profits ranging from 12% to 68%. [50]

But there was no secret formula paving the way for the Serralles' accomplishments. For example, they were the result of bold economic investments, manipulations, and a social arrangement of its labor force. The Serralles searched for high efficiency through full mechanization --possibly automation--, centralization of production, and cheap labor force. This transformed the haciendas into highly profitable independent producing units under the protective umbrella of hacienda "Mercedita."

This is the reason for Serralles' construction --possibly in the 1880s or early 890s-- of a foundry, forge, and workshop on the premises of hacienda "Mercedita." This shop would provide an independent repair and maintenance service for its machinery and technology. Sadly, the present state of deterioration at the workshop makes a fair evaluation of its remains practically impossible. Nevertheless, the few remaining machines, some still in situ, and the assorted variety of artifacts found suggest it was an important workshop. For example, the quantity of multiform wood patterns, foundry flasks, an 1879 grindstone --3 feet high-- mounted in a decorated cast iron frame, blacksmith tongs, anvils, forges, etc., all account for a multiple purpose service and repair workshop. There are also larger and more complex machines; for example, a small Beaudry Co. power hammer is still in operating condition. An interesting homemade device is a 13 feet x 1.6 feet x 1.6 tree trunk used as a bending and forming bench which still shows different slots and shapes for iron modelling.

Three other pieces require special attention. First, the old foundry cupola --approximately 20 feet high-- is still connected to its blower and air pipes. Second, the overhead travelling wood and iron crane is still mounted on tracks atop heavy supporting wood beams. And third, is the overhead shafting system which depicts a formidable parallel arrangement of shafts, belt pulleys, belt clutches, bearings, etc.

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The workshop is inoperative. Nevertheless, once in a while, the old sound from the blacksmith anvil could be heard at a distance. [51]

Footnotes

1. Archivo General de Puerto Rico (AGPR), Protocolos Notariales, Ponce: de Leon, 1875, f. 432-5.
2. AGPR, Protocolos Notariales, Ponce: de Leon, 1867, f. 247-9; J. Mayoral, 1876, f. 60-5.
3. AGPR, Protocolos Notariales, Ponce: R. Jimenez, 1846, f. 63-4, 237-8; F. Psarell, 1848, f. 217, 219; de Leon, 1850, f. 384; F. Parra, 1855, f. 36; de Leon, 1855, f. 158; F. Parra, 1860, f. 680-1, 731; F. Parra, 1861, n. folio; J. Mayoral, 1864, f. 74, 119, 282; F. Parra, 1864, f. 425; J. Mayoral, 1865, f. 187; id., 1866, f. 72, 357, 493; id., 1867, f. 247, 255-6, 465; F. Parra, 1867, f. 418; J. Mayoral, 1868, f. 686; de Leon, 1868, p. 24, 49-50; J. Mayoral, 1869, f. 463, 534, 619, 684, 690, 848; de Leon, 1869, f. 323, 34; J. Mayoral, 1869, f. 646; F. Parra, 1870, f. 243, 690, 1,131, 657; J. Mayoral, 1870, f. 624m 660, 718; F. Parra, 1871, f. 427; J. Mayoral, 1872, f. 71, 179, 180, 521, 721, 763; de Leon, 1872, f. 186, 290, 323, 490; F. Parra, 1872, f. 766, 920, 1, 164-7; id., 1873, f. 866, 1,134, 1,143; J. Mayoral, 1874, f. 1,403, 1,486, 1,528, 1,544; F. Parra, 1874, f. 1,671, 1,699; de Leon, 1875, f. 475-6; J. Mayoral, f. 1,116, 1,775; F. Parra, 1875, f. 1,206; id., 1876, f. 717; id., 1877, f. 74-5; J. Mayoral, 1877, f. 552; F. Parra, 1877, f. 1,139-40; J. Mayoral, 1877, f. 1,520; de Leon, 1878, f. 128, 532, 556, 649, 703; J. Mayoral, 1878, f. 622-3; F. Parra, 1878, f. 788; de Leon, 1879, f. 144; J. Mayoral, 1879, f. 1,091; F. Parra, 1879, f. 1817.
4. Ibid.
5. Fernando Ortiz, Contrapunteo cubano del tabaco y el azucar (Barcelona: Ariel, 1963), 48.
6. AGPR, Protocolos Notariales, Ponce: J. Mayoral, 1866, f. 303, 509; F. Parra, 1870, f. 706; id 1872, f. 55, 1,019.
7. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 433-5; J. Mayoral, 1876, f. 60-5.
8. AGPR, Protocolos Notariales, Ponce: J. Mayoral, 1866, f. 303, 509; id., 1867, f. 478, 1,867; id., 1869, f. 799, 802; F. Parra, 1870, f. 706, 1,117; id., 1871, f. 939, 941, 920; id., 1872, p. 55. 1,019; J. Mayoral, 1873, f. 4, 1,050; de Leon, 1873, f. 393-5; F. Parra, 1873, f. 20, 82, 897; de Leon, 1875, no folio; F. Parra, 1875, f. 1,213; J. Mayoral, 1875, f. 1,252; de Leon, 1876, p. 280, 694; F. Parra, 1877, f. 1,624-5, 2,186; de Leon, 1877, f. 781; id., 1878, f. 735; F. Parra, 1878, f. 1,511, 1,183; id., 1879, f. 1,587; de Leon, 1879, f. 1,027.
9. AGPR, RSGPR, E. 24, B. 84.

10. Ibid.
11. Ibid.
12. Ibid.
13. AGPR, Protocolos Notariales, Ponce: L. Morell, 1838, f. 488; id., 1839, f. 1,388; id., 1840, f. 707, 1,100; L. Capo, 1849, f. 171; F. Jimenez, 1848, f. 200; F. Pasarell, 1848, f. 510; F. Parra, 1850, f. 58, 73, 92; id., 1852, f. 442; id., 1855, f. 62, 324, 328, 329; A. Medrano, 1855, f. 10, 42; id., 1859, f. 291; F. Parra, 1864, f. 66; id., 1865, f. 1,274; id., 1867, f. 178, 278, 583; J. Mayoral, 1868, f. 70; id., 1869, f. 137, 445, 731, 837; F. Parra, 1870, f. 54, 121; J. Mayoral, 1870, f. 723, 793, 911; F. Parra, 1871, f. 669; J. Mayoral, 1872, f. 400, 469; id., 1873, f. 16.
14. Luis M. Diaz Soler, Historia de la esclavitud negra en Puerto Rico, 4th ed., (Rio Piedras, U.P.R., 1974), p. 344.
15. cf., note 13.
16. AGPR, Protocolos Notariales, Ponce: de Leon, 1863, f. 221; id., 1868, f. 118.
17. AGPR, Protocolos Notariales, Ponce: J. Mayhoral, 1871, f. 768.
18. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 218-9.
19. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 235.
20. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 212-226.
21. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 453-9.
22. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 457-9.
23. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 219-220.
24. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 212.
25. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 213.
26. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 213-4.
27. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 214.
28. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 212-220.
29. AGPR, Protocolos Notariales, Ponce: de Leon, 1985, f. 214.

30. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 323.
31. Ibid.
32. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 216-7.
33. AGPR, Protocolos Notariales, Ponce: de Leon, 1869, f. 34-5.
34. AGPR, Protocolos Notariales, Ponce: de Leon, 1869, f. 34-5.
35. AGPR, Protocolos Notariales, Ponce: de Leon, 1869, f. 35.
36. AGPR, Protocolos Notariales, Ponce: de Leon, 1875, f. 237-9.
37. Ibid.
38. AGPR, Protocolos Notariales, Ponce: de Leon, 1874, f. 732.
39. AGPR, Obras Publicas, Concesiones de Aguas. Legs. 63, 64, 65, 154, 155, 186, 190; cajas 424-5.
40. AGPR, Protocolos Notariales, Ponce. J. Mayoral, 1877, f. 1,564.
41. Ibid.
42. AGPR, Protocolos Notariales, Ponce: de Leon, 1865, f. 334; J. Mayoral, 1866, f. 405; de Leon, 1878, f. 417; F. Parra, 1879, f. 1,205.
43. AGPR, Protocolos Notariales, Ponce: F. Parra, 1871, f. 364.
44. Ibid.
45. AGPR, Protocolos Notariales, Ponce: F. Parra, 1872, f. 1,079.
46. AGPR, RSGPR, e. 226, b. 251, #1621.
47. AGPR, Protocolos Notariales, Ponce: J. Mayoral, 1872, f. 1,107.
48. AGPR, Protocolos Notariales, Ponce: J. Mayoral, 1875, f. 1,695, 1,936.
49. Serralles Collection, in Cental Mercedita (Ponce, P.R.), Accounting Books for Hacienda Mercedita, 1860-1890. The author consulted 12 volumes of documents. V. also Andres Ramos Mattei, "Los libros de cuentas de la Hacienda Mercedita, 1861-1890," CEREP, 1975. Also v. in AGPR, Puerto Rican Sugar Estates by Mirrlees Watson Co., Ltd., 16 April 1973.

50. Ibid. At this point of research on Hacienda "Mercedita," the 1977 HAER historians team learned by hearsay--two weeks after the decision had been taken--that "Mercedita" would not be recorded, only photographed. A new site had been selected as replacement, Hacienda "Lucia" in Yabucoa. It was agreed, with the Supervisory Architect's consent, to proceed immediately to research Hacienda "Lucia." It was done as agreed. But the new site was also dropped in mid-August, since it could not be properly cleaned of overgrown brush and trees. Both decisions seriously affected the outcome of the research to the point that they practically sent overboard more than one month's research. Nevertheless, a final effort was made at the beginning of September 1977 to locate reliable sources who might provide information on the foundry, forge, and workshop. None was found. Nevertheless, the foundry's sounds were recorded and are filed with this report.
51. Tape Hacienda Mercedita: Foundry Sounds, 23 August 1977 (Taped by Benjamin Nistal-Moret).

NOTE:

It has come to the attention of historian Benjamin Nistal-Moret that several documents related to the establishment of machinery at hacienda "Mercedita" by Mirrlees Co. --the so-called job sheets-- has been found at a public library in Glasgow, England. The University of Puerto Rico researcher, who made this extremely important finding, has not made the information available to this author or to the public. This author has in his possession Xerox copies of the materials.